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Atty. Docket No. PLA13 P-300

**CERTIFICATE OF MAILING**

I hereby certify that this paper, together with all enclosures identified herein, are being deposited with the United States Postal Service as first class mail, addressed to the Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date indicated below.

June 1, 2005  
Date

Melanie S. Jernberg  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Art Unit : 2834  
Applicant : Steve Anderson Platt  
Appln. No. : 09/981,231  
Filing Date : October 17, 2001  
Confirmation No. : 5580  
For : WIND POWERED GENERATOR

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**TRANSMITTAL OF APPEAL BRIEF**  
**(PATENT APPLICATION - 37 CFR §41.37)**

1. Transmitted herewith is the APPELLANT'S BRIEF in this application, with respect to the Notice of Appeal filed on April 1, 2005.

2. **STATUS OF APPLICANTS**

This application is on behalf of:

\_\_\_ other than a small entity.

X  a small entity.

3. **FEE FOR FILING APPEAL BRIEF**

Pursuant to 35 USC §41(a)(6), the fee for filing the Appeal Brief is:

X  small entity \$250.00

\_\_\_ other than a small entity \$500.00

Appeal Brief fee due: \$250.00 (previously submitted)

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4. **EXTENSION OF TERM**

The proceedings herein are for a patent application and the provisions of 35 USC §41(a)(8) apply.

*(complete (a) or (b), as applicable)*

(a)        Applicant petitions for an extension of time under 37 CFR §1.136:

<u>Extension (months)</u>	<u>Fee for other than small entity</u>	<u>Fee for small entity</u>
<u>      </u> one month	\$120.00	\$60.00
<u>      </u> two months	\$450.00	\$225.00
<u>      </u> three months	\$1020.00	\$510.00
<u>      </u> four months	\$1590.00	\$795.00
<u>      </u> five months	\$2160.00	\$1080.00

FEE: \$

If an additional extension of time is required, please consider this a petition therefor.

*(check and complete the next item, if applicable)*

       An extension for        months has already been secured, and the fee paid therefor of \$        is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request: \$

*or*

(b)   X   Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

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**5. TOTAL FEE DUE**

The total fee due is:

Appeal Brief fee: \$250.00

Extension fee (if any) \$

**TOTAL FEE DUE:** \$250.00 (previously submitted)

**6. FEE PAYMENT**

    Attached is a check in the sum of \$.

  X   The fee due was previously submitted on December 29, 2003.

    Charge Account No. 16 2463 the sum of \$       .

A duplicate of this transmittal is attached.

**7. FEE DEFICIENCY**

  X   If any additional extension and/or fee is required, this is a request therefor  
and to charge Account No. 16 2463.

*and/or*

  X   If any additional fee for claims is required, charge Account No.  
16 2463.

Respectfully submitted,

6/1/05  
Date

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Atty. Docket No. PLA13 P-300

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APPEAL BRIEF (37 CFR §41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on April 1, 2005.

The fees required under 35 USC 41(a)(6), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains these items under the following headings, and in the order set forth below (37 CFR §41.37(c)):

- I. Real Party in Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Claimed Subject Matter
- VI. Grounds of Rejection to Be Reviewed on Appeal
- VII. Argument
- VIII. Conclusion

Appendix of Claims Involved in the Appeal  
Evidence Appendix  
Related Proceedings Appendix

The final page of this brief bears the attorney's signature.

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Appendix of Claims Involved in the Appeal

Evidence Appendix

Related Proceedings Appendix

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## TABLE OF AUTHORITY

### Case Authority

*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.,*

221 USPQ 481, 485 (Fed. Cir. 1984) . . . . . 11, 18

*In re Sun,*

31 U.S.P.Q.2d 1451, 1453 (Fed. Cir. 1993) . . . . . 11, 18

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28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993) . . . . . 13

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17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. and Inter. 1990) . . . 13

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5 U.S.P.Q.2d 1586 (Fed. Cir. 1988) . . . . . 19, 20, 22, 23, 24, 30,  
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*In re Merck & Co., Inc.,*

231 U.S.P.Q. 375 (Fed. Cir. 1986) . . . . . 19, 23, 24, 30, 31, 33, 35

*In re Royka,*

180 U.S.P.Q. 550 (C.C.P.A. 1974) . . . . . 20, 23, 24, 30, 31, 33, 35

*In re Wesslau,*

353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965) . . . . . 21

*In re Mercer,*

515 F.2d 1161, 1165-66, 185 USPQ 774,778 (CCPA 1975) . . . . 21

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**I. Real Party in Interest**

The named applicant is the party in interest in this application.

**II. Related Appeals and Interferences**

There are no related appeals or interferences pending during this application.

**III. Status of Claims**

Claims 1-37 and 39-74 are pending in this application. Claims 1-8, 11-14, 20-23, 29-37, 46-49, 58-71 and 73 are allowed. Claim 40 has been indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As discussed below, an Amendment After Appeal was filed on April 1, 2005 wherein claim 40 was rewritten into independent form. Claims 9, 10, 15-19, 24-28, 39, 41-45, 50-57, 71, 72 and 74 are the subject of this appeal.

**IV. Status of Amendments**

An Amendment After Appeal was filed on April 1, 2005. The Amendment After Appeal rewrites claim 40 into independent form as this claim has been indicated as being in condition for allowance if rewritten into independent form.

**V. Summary of Claimed Subject Matter**

As described in the specification portion of the application (pages 1-17), and illustrated in the related figures (Figs. 1-15), the invention recited in the finally rejected claims relates to a wind powered generator.

A first aspect of the present invention is to provide a wind powered generator support assembly for supporting a wind powered generator 12 comprising a tower 14 and a vertical elevator 24 on the tower 14. The elevator 24 includes a track 44 and a carriage 46 configured to move along the track 44. The carriage 46 includes a pivot ring 50 configured to accept the wind powered generator 12 therein for allowing the wind powered generator 12 to rotate about the carriage 46. The vertical elevator 24 is configured to vertically lift the wind powered

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generator 12 with the carriage 46 to position the wind powered generator 12 at a top of the tower 14.

Another aspect of the present invention is to provide a wind powered electrical generation system 10 comprising a tower 14 including a vertical elevator 24. The vertical elevator 24 has a track 44 and a carriage 46 configured to move along the track 44 and a wind powered generator 12 configured to be connected to the carriage 46. The wind powered generator 12 includes a plurality of airfoils 16 and an electric generator 190, wherein the wind powered generator 12 can be removably placed within the carriage 46 after the tower 14 has been erected and lifted vertically with the carriage 46 to position the wind powered generator 12 at a top of the tower 14. The wind powered generator 12 can be removed from within the carriage 46 after the carriage 46 has been lowered.

A further aspect of the present invention is to provide a wind powered generator 12 comprising a housing 128 and a rod 130 configured to rotate within the housing 128. At least six spars 98 are connected to the rod 130 and extend radially therefrom. An airfoil 16 is connected to each of the spars 98 at a location distal the rod 130. A generator 190 is located upwind of the spars 98 and interconnected to the rod 130, wherein the spars 98 and the rod 130 will rotate as wind passes the airfoils 16, thereby powering the generator 190.

Yet another aspect of the invention is to provide a wind powered electrical generation system 10 comprising a tower 14 including an elevator 24 having a carriage 46. The elevator 24 is configured to move the carriage 46 between a bottom and a top of the tower 14. A first member 102 is rotatably connected to the carriage 46. The first member 102 has an axis of rotation substantially parallel to the direction of movement of the carriage 46 and a second member 96 connected to the first member 102. The second member 96 has a first end and a second end. A hub assembly 132 is connected to the first end of the second member 96 and the hub assembly 132 includes a plurality of spars 98. An airfoil 16 is connected to each spar 98 and a generator 190 connected to the second end of the second member 96. The spars 98 and the second member 96 will rotate as wind passes the airfoils 16, thereby powering the generator 190.



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Another aspect of the present invention is to provide a portable wind powered generation system 10 comprising a tower 14 having an upper tower section 22 and a lower tower section 20, the upper tower section 22 and the lower tower section 20 being removably connected. The system includes a wind powered generator 12 and an elevator 24 connected to the tower 14, the elevator 24 being able to move between the lower tower section 20 and the upper tower section 22 of the tower 14. The wind powered generator 12 is configured to be connected to the elevator 24 to raise the wind powered generator 12 from the lower tower section 20 to the upper tower section 22. The wind powered generator 12 can be unconnected from the elevator 24 and the upper tower section 22 can be unconnected from the lower tower section 20, thereby allowing the portable wind powered generator assembly 10 to be easily transported and erected.

Yet another aspect of the present invention is to provide a wind powered generator 12 comprising a housing 128, a rod 130 configured to rotate within the housing 128, at least two spars 98 connected to a hub 132 on the rod 130 and extending radially therefrom, an airfoil 16 connected to each of the spars 98 at a location distal the rod 130, the airfoils 16 being configured to pivot about the spars 98 and to slide longitudinally along the spars 98, the airfoils 16 being biased towards a first end of the spars 98 connected to the hub 132. Each spar 98 includes a cam member 158 adjacent a second end of the spar 98 opposite to the hub 132. Each airfoil 16 includes a cam surface 182 configured to engage the cam member 158 on the spar 98. The cam member 158 and the cam surface 182 are configured to engage to thereby rotate the airfoils 16 relative to the spars 98 as the airfoils move along the spars 98 towards the second end of the spars 98. A biasing member 162 biases the airfoils 16 towards the first end of the spars 98 connected to the hub 132, the biasing member 162 biasing the airfoils 16 in a biasing direction non-parallel to a sliding direction of the airfoils 16, the sliding direction being parallel to a sliding direction of the airfoils 16 along the spars 98.

A further aspect of the present invention is to provide a wind powered generator 12 comprising a housing 128, a rod 130 configured to rotate within the housing 128, at least two spars 98 connected to a hub 132 on the rod 130 and extending radially therefrom, an airfoil 16 connected to each of the spars 98 at a location distal the rod 130, the airfoils 16 being

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configured to pivot about the spars 98 and to slide longitudinally along the spars 98, the airfoils 16 being biased towards a first end of the spars 98 connected to the hub 132. Each spar 98 includes a cam member 158 adjacent a second end of the spar 98 opposite to the hub 132. Each airfoil 16 includes a cam surface 182 configured to engage the cam member 158 on the spar 98. The cam member 158 and the cam surface 182 are configured to engage to thereby rotate the airfoils 16 relative to the spars 98 as the airfoils 16 move along the spars 98 towards the second end of the spars 98. A force from wind applied to the airfoil 16 lessens over an entire length of the spars 98 as the airfoils 16 pivot.

## **VI. Grounds of Rejection to be Reviewed Upon Appeal**

Claims 9, 10, 15, 17-19, 24, 26, 57 and 71 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,311,434 to Abe (hereinafter referred to as “the Abe ‘434 patent”).

Claims 18 and 19 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,278,198 to Willis et al. (hereinafter referred to as “the Willis et al. ‘198 patent”).

Claims 16 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe ‘434 patent in view of U.S. Patent No. 6,239,507 to Douthit (hereinafter referred to as “the Douthit ‘507 patent”).

Claims 27 and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe ‘434 patent in view of U.S. Patent No. 4,374,631 to Barnes (hereinafter referred to as “the Barnes ‘631 patent”).

Claims 39, 41-45, 50, 52 and 54-56 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,110,631 to Salter (hereinafter referred to as “the Salter ‘631 patent”) in view of the Abe ‘434 patent.

Claim 51 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Salter ‘631 patent in view of the Abe ‘434 patent and U.S. Patent No. 6,239,507 to Douthit (hereinafter referred to as “the Douthit ‘507 patent”).

Claim 53 has been rejected under 35 U.S.C. §103(a) as being unpatentable over the Salter ‘631 patent in view of the Abe ‘434 patent and the Barnes ‘631 patent.

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Claim 57 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe '434 patent in view of U.S. Patent No. 5,244,346 to Fergusson (hereinafter referred to as "the Fergusson '346 patent").

Claims 72 and 74 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe '434 patent in view of the Barnes '631 patent.

## **VII. Arguments**

### **A. Rejection of Claims 9, 10, 15, 17-19, 24, 26, 57 and 71 as Being Unpatentable Over the Abe '434 Patent**

According to the Office Action, claims 9, 10, 15, 17-19, 24, 26, 57 and 71 have been rejected under 35 U.S.C. §102(b) as being anticipated by the Abe '434 patent. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, *arranged as in the claim*." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of anticipation based upon the prior art. *In re Sun*, 31 U.S.P.Q.2d 1451, 1453 (Fed. Cir. 1993) (unpublished). Applicant respectfully asserts that the Examiner has not established a prima facie case of anticipation to reject claims 9, 10, 15, 17-19, 24, 26, 57 and 71.

#### Claims 9, 15 and 17

Claim 9 defines a wind powered generator support assembly for supporting a wind powered generator including, among other things, a tower and a vertical elevator on the tower, with the elevator including a track and a carriage configured to move along the track, the carriage including a pivot ring configured to accept the wind powered generator therein for allowing the wind powered generator to rotate about the carriage, wherein the vertical elevator is configured to vertically lift the wind powered generator with the carriage to position the wind powered generator at a top of the tower.

The prior art of record does not disclose or suggest the above noted features of claim 9. Specifically, the Abe '434 patent does not disclose a vertical elevator on a tower including a

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track and a carriage configured to move along the track, with the carriage including a pivot ring configured to accept a wind powered generator therein. The Abe '434 patent discloses a thrust bearing 17 between a base 9 and a supporting member 6. According to the final rejection of the claims, the Abe '434 patent discloses a carriage 6, 12 and a pivot ring in the form of a roller bearing 17. Paragraph 3, Office Action mailed January 5, 2005. However, as clearly illustrated in Figs. 1 and 2 of the Abe '434 patent, the mount 12 and the supporting member 6 are separate elements and therefore cannot comprise a carriage. Furthermore, the mount 12 does not include the thrust bearing 17. Notably, in Fig. 1, the thrust bearing 17 is spaced from the mount 12.

Nevertheless, the Examiner has defined the Abe '434 patent as having a carriage defined by the mount 12 and the supporting member 6. If that was true, the base 9 of the Abe '434 patent would also have to be part of the carriage as the base 9 is located between the supporting member 6 and the mount 12. Furthermore, since the "shaft 10 is fixed to the base 9," the shaft 10 would have to be part of the carriage. See lines 25-26 of column 3 of the Abe '434 patent. Accordingly, the carriage of the Abe '434 patent, if the Examiner is correct, would include the shaft 10. Notably, the Examiner has indicated that the parallel arms 7 and the supporting member 6 are part of the carriage by stating that "the generator" can be separated from the carriage altogether "by removing the shaft 8." See paragraph 15, page 14 of the Office Action mailed January 5, 2005. Finally, since the shaft 10 is the only element located between the thrust bearings 17 (see Fig. 2 of the Abe '434 patent), the thrust bearing 17 would therefore not include any part of any wind powered generator of the Abe '434 patent therein. In summation, according to the Examiner, the carriage of the Abe '434 patent includes the mount 12, the base 9, the shaft 10, the thrust bearing 17, the supporting member 6 and the arms 7. Therefore, the Abe '434 patent does not disclose a carriage including a pivot ring configured to accept a wind powered generator, which could only be the nacelle 2, the rotor head 4 and the rotor blades 5, as none of these elements of any wind powered generator are located within a pivot ring of a carriage.

Moreover, according to the final Office Action:

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Regarding claims 9 and 19, Abe (US 4,311,434) shows in Figure 4 the carriage including the support 6 and the mount 12 that comprises the pivot ring 17 . . . Therefore, the carriage includes the pivot ring as claimed. Regarding the circular shape of the ring examiner directs applicant's attention to column 3 lines 36-47 where Abe describes that the support 6 rotates relatively to the base 9 above the pivot 10 on the thrust bearing 17. One of ordinary skill in the art will appreciate that the bearing must be in a form of circle to allow such rotation.

Paragraph 15 of page 11 of the Office Action mailed January 5, 2005. However, Fig. 2 of the Abe '434 patent only discloses two spaced apart bearings 17. If the Office Action is stating that the element 17 in the Abe '434 patent is the pivot ring, Applicant submits that the carriage is not configured to be accepted within the bearing 17. If the Office Action is stating that the Abe '434 patent includes a plurality of bearings 17 in a form of a circle as the bearings 17 must be in a form of a circle to allow rotation, Applicant submits that the bearings do not need to be in a form of a circle to allow rotation. Only two bearings 17 are disclosed in Fig. 2 of the Abe '434 patent. Two bearings 17 would allow the supporting member 6 to rotate as the support member 6 is fixed in position by the vertical shaft 10. Therefore, the Abe '434 patent does not disclose that the bearings 17 are in the form of a circle or a ring. Furthermore, since the supporting member 6 is fixed in position relative to the shaft 10 and the shaft 10 is fixed to the base 9, the thrust bearings 17 would not have to be in the form of a circle or ring. See lines 25-28 of column 3 of the Abe '434 patent. Applicant notes that "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." M.P.E.P. § 2112; *In re Rijchaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. and Inter. 1990) (emphasis original). Therefore, since the Abe '434 patent does not disclose a pivot ring and a pivot ring does not necessarily flow from the teachings of the Abe '434 patent, the Abe '434 patent does

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not disclose a pivot ring as claimed in claim 9. Accordingly, claim 9 is in condition for allowance.

Claims 15 and 17 depend from claim 9, and since claim 9 defines unobvious patentable subject matter, claims 15 and 17 define patentable subject matter. Accordingly, claims 15 and 17 are also in condition for allowance.

#### Claim 10

Claim 10 depends from claim 9 and further defines the track as including a first side guide having a first vertical strip and a second side guide having a second vertical strip and the carriage including a first side groove configured to accept a first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip of a second vertical strip of the track. The prior art of record does not disclose or suggest the above noted features of claim 10.

First, claim 10 depends from claim 9, since claim 9 defines unobvious patentable subject matter as discussed above, claim 10 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a carriage including a first side groove configured to accept a first vertical strip and a second side groove configured to accept a second vertical strip. Specifically, the Abe '434 patent does not disclose that the mount 12 has any grooves or grooves accepting vertical strips. While the final Office Action states that the Abe '434 patent includes vertical strips as the element 1a in the Abe '434 patent, the guides 1a of the Abe '434 patent are not accepted into any groove. The Abe '434 patent does not disclose grooves and grooves do not necessarily flow from the teachings of the Abe '434 patent. Furthermore, Applicant submits that a closed projection surrounding an element is not a "groove." Accordingly, claim 10 is in condition for allowance.

#### Claims 18, 26 and 71

Claim 18 defines a wind powered electrical generation system including, among other things, a tower including a vertical elevator, with the vertical elevator having a track and a carriage configured to move along the track, and a wind powered generator configured to be

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connected to the carriage, with the wind powered generator including a plurality of air foils and an electric generator, wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower and the wind powered generator can be removed from within the carriage after the carriage has been lowered.

The prior art of record does not disclose or suggest the above noted features of claim 18. According to the final Office Action, the Abe '434 patent includes a carriage 6, 12. As illustrated in Fig. 1, the mount 12 includes a seat 15 having rails 16 thereon. The Abe '434 patent, however, does not disclose a wind powered generator that can be removably placed within a carriage and that can be removed from within a carriage. First, while the rotor and nacelle 2 may be replaced while the mount 12 is at a lower position, the structure as disclosed in the Abe '434 patent must be disassembled before anything can be removed. Therefore, the Abe '434 patent does not disclose a wind powered generator that can be removed after the mount 12 has been lowered. Furthermore, the mount 12 does not have an area for accepting anything, much less the nacelle 2, the rotor head 4 or the rotor blade 5, therein. Accordingly, the Abe '434 patent does not disclose a wind powered generator that can be removed from within the carriage after the carriage has been lowered. In other words, the Abe '434 patent does not disclose anything removed from within the mount 6, 12. While the Examiner has indicated that the wind powered generator can be removed from within the carriage, nowhere does the Abe '434 patent state that the elements are separable (except for the blades 5 from the rotor head). The only manner of separating the elements defined by the Examiner as being the wind powered generator from the elements defined by the Examiner as being the carriage would be to destroy the parts by sawing or tearing one or two fixed elements into two parts, and Applicant submits that this destruction does not make the elements "removable." Accordingly, claim 18 is in condition for allowance.

Claims 26 and 71 depend from claim 18, and since claim 18 defines unobvious patentable subject matter, claims 26 and 71 define patentable subject matter. Accordingly, claims 26 and 71 are in condition for allowance.

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#### Claim 19

Claim 19 depends from claim 18 and further defines the track as including a first side guide having a first vertical strip and a second side guide having a second vertical strip and the carriage as including a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track. The prior art of record does not disclose or suggest the above noted features of claim 19.

First, claim 19 depends from claim 18, and since claim 18 defines unobvious patentable subject matter as discussed above, claim 19 defines patentable subject matter. Second, in regard to claim 19, the prior art of record does not disclose or suggest a carriage including a first side groove configured to accept a first vertical strip and a second side groove configured to accept a second vertical strip. Specifically, the Abe '434 patent does not disclose a carriage having grooves. While the final Office Action states that the Abe '434 patent includes vertical strips as the element 1a in the Abe '434 patent, the guides 1a of the Abe '434 patent are not accepted into any groove. The Abe '434 patent does not disclose grooves and grooves do not necessarily flow from the teachings of the Abe '434 patent. Furthermore, Applicant submits that a closed projection surrounding an element is not a "groove." Accordingly, claim 19 is in condition for allowance.

#### Claim 24

Claim 24 depends from claim 18 and further defines the carriage as including a pivot ring configured to accept the wind powered generator therein and the pivot ring as including a plurality of roller bearings configured to accept a portion of the wind powered generator thereon, thereby allowing the wind powered generator to rotate. The prior art of record does not disclose or suggest the above noted features of claim 24.

First, claim 24 depends from claim 18, and since claim 18 defines unobvious patentable subject matter as discussed above, claim 24 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a carriage including a pivot ring configured to accept a wind powered generator therein. As discussed above in regard to claim 9, the Abe



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'434 patent does not disclose a carriage including a pivot ring or a carriage including a pivot ring configured to accept a wind powered generator therein. Notably, as discussed above, the Examiner has indicated in the rejection of claim 18, the base claim of claim 24, that the carriage includes the arms 7 and the supporting member 6. In this case, therefore, the bearings 17 cannot accept any part of the wind powered generator therein. Accordingly, claim 24 is in condition for allowance.

#### Claim 27

Claim 27 depends from claim 18 and further defines the wind powered generator as including a housing, a rod configured to rotate within the housing, and at least two spars connected to the rod and extending radially therefrom, wherein one of the airfoils is connected to each of the spars. The prior art of record does not disclose or suggest the above noted features of claim 27.

First, claim 27 depends from claim 18, and since claim 18 defines unobvious patentable subject matter as discussed above, claim 27 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a rod and at least two spars connected to the rod and extending radially therefrom, wherein one of the airfoils is connected to each of the spars. Specifically, the Abe '434 patent does not disclose both airfoils and spars. Notably, the Examiner admits that the Abe '434 patent does not disclose spars in the final Office Action, wherein the Examiner states that "Abe does not disclose a rod rotating within a housing and at least two spars connected to, and radially extending from the rod and each having an airfoil connected thereto." See paragraph 6, page 4 of the Office Action mailed January 5, 2005. Accordingly, claim 27 is in condition for allowance.

#### Claim 57

Claim 57 defines a portable wind powered generation system including, among other things, a tower having an upper tower section and a lower tower section, the upper tower section and the lower tower section being removably connected, a wind powered generator and an elevator connected to the tower, the elevator being able to move between the lower tower

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section and the upper tower section of the tower. The wind powered generator is configured to be connected to the elevator to raise the wind powered generator from the lower tower section to the upper tower section. The wind powered generator can be unconnected from the elevator and the upper tower section can be unconnected from the lower tower section, thereby allowing the portable wind powered generator assembly to be easily transported and erected.

The prior art of record does not disclose or suggest the above noted features of claim 57. Specifically, the Abe '434 patent does not disclose a tower having an upper tower section and a lower tower section, with the upper tower section and a lower tower section being removably connected. Furthermore, the Abe '434 patent does not disclose a wind powered generator that can be unconnected from an elevator and an upper tower section that can be unconnected from a lower tower section, thereby allowing the portable wind powered generator assembly to be easily transported and erected. Accordingly, claim 57 is in condition for allowance.

#### Conclusion

Accordingly, claims 9, 10, 15, 17-19, 24, 26, 57 and 71 are allowable over the Abe '434 patent and the Board is requested to reverse the rejection of these claims.

#### **B. Rejection of Claims 18 and 19 as Being Anticipated by the Willis et al. '198 patent**

Claims 18 and 19 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,278,198 to Willis et al. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of anticipation based upon the prior art. *In re Sun*, 31 USPQ2d 1451, 1453 (Fed. Cir. 1993) (unpublished). Applicant respectfully asserts that the Examiner has not yet met his burden of establishing a prima facie case of anticipation with respect to the rejected claims.

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### Claim 18

Claim 18 defines a wind powered electrical generation system including, among other things, a tower including a vertical elevator, the vertical elevator having a track and a carriage configured to move along the track and a wind powered generator configured to be connected to the carriage. The wind powered generator includes a plurality of airfoils and an electric generator. The wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower. The wind powered generator can be removed from within the carriage after the carriage has been lowered.

The prior art of record does not disclose the above noted features of claim 18. Specifically, the Willis et al. '198 patent does not disclose a wind powered generator that can be removably placed within a carriage. While the Willis et al. '198 patent does show that the wind turbine 16 can be removed from the carriage 32, the Willis et al. '198 patent does not disclose that the wind turbine 16 can be removably placed within the carriage 32. Accordingly, claim 18 is in condition for allowance.

### Claim 19

Claim 19 depends from claim 18 and further defines the track as including a first side guide having a first vertical strip and a second side guide having a second vertical strip and the carriage including a first side groove configured to accept a first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip of a second vertical strip of the track. The prior art of record does not disclose or suggest the above noted features of claim 10.

First, claim 19 depends from claim 18, and since claim 18 defines unobvious patentable subject matter as discussed above, claim 19 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a carriage including a first side groove configured to accept a first vertical strip and a second side groove configured to accept a second vertical strip. Specifically, the Abe '434 patent does not disclose that the mount 12 has any grooves or grooves accepting vertical strips. While the final Office Action states that the

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Abe '434 patent includes vertical strips as the element 1a in the Abe '434 patent, the guides 1a of the Abe '434 patent are not accepted into any groove. The Abe '434 patent does not disclose grooves and grooves do not necessarily flow from the teachings of the Abe '434 patent. Furthermore, Applicant submits that a closed projection surrounding an element is not a "groove." Accordingly, claim 19 is in condition for allowance.

### Conclusion

Accordingly, claims 18 and 19 are allowable over the Willis et al. '198 patent and the Board is requested to reverse the rejection of these claims.

### **C. Rejection of claims 16 and 25 as being unpatentable over the Abe '434 patent in view of the Douthit '507 patent**

Claims 16 and 25 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Abe '434 patent in view of the Douthit '507 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a *prima facie* case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a *prima facie* case of obviousness to reject claims 16 and 25 over the Abe '434 patent in view of the Douthit '507 patent.

### Claim 16

Claim 16 depends from claim 9 and further defines the carriage as including a plurality of contacts configured to contact a rotating portion of the wind powered generator to allow power to

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be transferred from the wind powered generator to a remote point. The prior art of record does not disclose or suggest the claimed features of claim 16.

The prior art of record does not disclose or suggest the claimed features of claim 16. First, claim 16 depends from claim 9, and since claim 9 defines patentable subject matter as discussed above, claim 16 defines patentable subject matter. Second, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. According to the Office Action:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by Abe and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind powered generator as taught by Douthit for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

Paragraph 6, page 4 of the Office Action mailed January 5, 2005. However, there is no suggestion or motivation for substituting the turntable 16 as disclosed in the Douthit '507 patent for the mount 12 disclosed in the Abe '434 patent. Such a combination would not allow the nacelle 2, rotor head 4 or rotor blades 5 of the Abe '434 patent to be raised or lowered because the turntable 16 as disclosed by the Douthit '507 patent could not move on the guides as disclosed by the Abe '434 patent. Therefore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the Abe '434 patent with the Douthit '507 patent as set forth in the final rejection of the claims.

In response to the above argument, the Office Action states:

In combination Abe and Douthit teach the invention as claimed. The detailed design of such system is a design choice that requires only routine skills in the art.

Paragraph 15, page 13 of the Office Action mailed January 5, 2005. First, Applicant notes that it is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts

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necessary to the full appreciation of what such reference fairly suggests to one skilled in the art. *In re Wesslau*, 353 F.2d 238, 241, 147 USPQ 391, 393 (CCPA 1965); see also *In re Mercer*, 515 F.2d 1161, 1165-66, 185 USPQ 774,778 (CCPA 1975). Second, if a further modification or "a design choice" is needed to reject claim 16, the Abe '434 patent and the Douthit '507 patent do not teach the invention as claimed as set forth by the Examiner. Third, changing the function of a combination is more than a mere design choice and there must be some motivation or suggestion for making such a change. See *In re Chu*, 36 USPQ2d 1089 (Fed. Cir. 1995). Accordingly, claim 16 is in condition for allowance.

#### Claim 25

Claim 25 depends from claim 18 and further defines the carriage as including a plurality of contacts configured to contact the rotating portion of the wind powered generator to allow power to be transferred from the wind powered generator to a remote point. The prior art of record does not disclose or suggest the claimed features of claim 25.

First, claim 25 depends from claim 18, and since claim 18 defines patentable subject matter as discussed above, claim 25 defines patentable subject matter. Second, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings. According to the Office Action:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the tower as taught by Abe and to provide the carriage including the plurality of contacts contacting the rotating portion of the wind powered generator as taught by Douthit for the purpose of transferring the current from the generator to an external storage or transmission means while allowing unlimited and free rotation of the generation above a vertical axis.

Paragraph 6, page 4 of the Office Action mailed January 5, 2005. However, there is no suggestion or motivation for substituting the turntable 16 as disclosed in the Douthit '507 patent for the mount 12 disclosed in the Abe '434 patent. Such a combination would not allow the necelle 2, rotor head 4 or rotor blades 5 of the Abe '434 patent to be raised or lowered

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because the turntable 16 as disclosed by the Douthit '507 patent could not move on the guides 1a disclosed by the Abe '434 patent. Therefore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the Abe '434 patent with the Douthit '507 patent as set forth in the final Office Action. Furthermore, modifying the Abe '434 patent in view of the Douthit '507 patent is more than a mere "design change" as disclosed above regarding claim 16 and therefore is improper. Accordingly, claim 25 is in condition for allowance.

#### Conclusion

Accordingly, claims 16 and 25 are allowable over the Abe '434 patent in view of the Douthit '507 patent, and the Board is requested to reverse the rejection of these claims.

#### **D. Rejection of claims 27 and 28 as being unpatentable over the Abe '434 patent in view of the Barnes '631 patent.**

Claims 27 and 28 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Abe '434 patent in view of the Barnes '631 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a *prima facie* case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a *prima facie* case of obviousness to reject claims 27 and 28 over the Abe '434 patent in view of the Barnes '631 patent.

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#### Claim 27

Claim 27 further defines the wind powered electrical generation system of claim 18 by stating that the wind powered generator includes a housing, a rod configured to rotate within the housing and at least two spars connected to the rod and extending radially therefrom, wherein one of the airfoils is connected to each of the spars. Claim 27 depends from claim 18, and since claim 18 defines patentable subject matter as discussed above, claim 27 defines patentable subject matter. Accordingly, claim 27 is in condition for allowance.

#### Claim 28

Claim 28 further defines the wind powered electrical generation system of claims 18 and 27 by stating that the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, with the airfoils being biased towards a first end of the spars connected to the rod, wherein each spar includes a cam member adjacent a second end of the spar opposite to the rod, wherein each airfoil includes a cam surface configured to engage the cam member on the spar, and wherein the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars. Claim 28 depends from claims 18 and 27, and since claims 18 and 27 define patentable subject matter as discussed above, claim 28 defines patentable subject matter. Accordingly, claim 28 is in condition for allowance.

#### Conclusion

Accordingly, claims 27 and 28 are allowable over the Abe '434 patent in view of the Barnes '631 patent, and the Board is requested to reverse the rejection of these claims.

#### **E. Rejection of claims 39, 41-45, 50, 52 and 54-56 as being unpatentable over the Salter '631 patent in view of the Abe '434 patent.**

Claims 39, 41-45, 50, 52 and 54-56 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Salter '631 patent in view of the Abe '434 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j).



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Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a prima facie case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a prima facie case of obviousness to reject claims 39, 41-45, 50, 52 and 54-56 over the Salter '631 patent in view of the Abe '434 patent.

#### Claims 39 and 43

Claim 39 defines a wind powered generator including, among other things, a housing, a rod configured to rotate within the housing and at least six spars connected to the rod and extending radially therefrom. An airfoil is connected to each of the spars at a location distal the rod and a generator is located upwind of the spars and interconnected to the rod, wherein the spars and the rod will rotate as wind passes the airfoils, thereby powering the generator.

The prior art of record does not disclose or suggest all of the above noted features of claim 39. In regard to the first criterion of obviousness, there is no suggestion or motivation, either in the references themselves or to one of ordinary skill in the art, to modify the reference as set forth in the Office Action. According to the Office Action:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the wind powered generator as taught by Salter and to provide the well known in the art configuration with the generator housing located upwind the rotor as taught by Abe for the purpose of approving the generator cooling, since applicant did not disclose that such configuration solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with upwind or downwind configuration.

Paragraph 8, page 6 of the Office Action mailed January 5, 2005.

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According to §2142 of the M.P.E.P.:

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

Furthermore, according to the same section:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

As discussed above, the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. The initial burden is not on the Applicants to factually support a *prima facie* conclusion of non-obviousness. Furthermore, placing a generator upwind of a rotor in the Salter '631 patent would not work as well as a downwind generator as disclosed by the Salter '631 patent. The Salter '631 patent includes blades 19 fixed in position between a hub 18 and a rim 13. Furthermore, as illustrated in FIG. 2 of the Salter '631 patent, the blades 19 have a bottom side as illustrated in FIG. 2 that provides maximum rotation for the rotors. If wind was applied to the top of the blades 19 as illustrated in Fig. 2, which would happen if the generator was in an upwind configuration, the rotors would not turn as fast (if at all) and the efficiency of the system would be greatly reduced. Therefore, there is no suggestion or motivation to combine the Salter '631 patent with the Abe '434 patent as set forth in the Office Action, as any such combination would substantially reduce the efficiency of the resulting system. Finally, Applicant submits that a motivation of "improving the generator cooling" is not a proper motivation. Accordingly, claim 39 is in condition for allowance.

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Claim 43 depends from claim 39, and since claim 39 defines patentable subject matter as discussed above, claim 43 defines patentable subject matter. Accordingly, claim 43 is also in condition for allowance.

#### Claim 41

Claim 41 depends from claim 39 and further defines the wind powered generator of claim 39 as including an electrical generator connected to the housing. The prior art of record does not disclose or suggest the above noted features of claim 41.

First, claim 41 depends from claim 39, and since claim 39 defines patentable subject matter as discussed above, claim 41 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a wind powered generator including a rod configured to be within a housing, at least six spars connected to the rod and an electrical generator connected to the housing. Specifically, the Salter '631 patent does not disclose a housing having a rod therein and being connected to an electrical generator as defined in claim 41. Therefore, a combination of the Salter '631 patent and the Abe '434 patent do not include all of the features of claim 41. Accordingly, claim 41 is in condition for allowance.

#### Claim 42

Claim 42 depends from claim 39 and further defines the wind powered generator of claim 39 as including a vertical leg connected to the housing, wherein the housing is connected to an end of the vertical leg at a position off center from an axis of the vertical leg. The prior art of record does not disclose or suggest the above noted features of claim 42.

First, claim 42 depends from claim 39, and since claim 39 defines patentable subject matter as discussed above, claim 42 defines patentable subject matter. Second, the prior art of record does not disclose or suggest a vertical leg connected to a housing, wherein the housing is connected to an end of the vertical leg at a position off center from an axis of a vertical leg. Neither the Salter '631 patent nor the Abe '434 patent disclose or suggest a housing connected to a vertical leg at a position off center from an axis of the vertical leg. Accordingly, claim 42 is in condition for allowance.

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#### Claim 44

Claim 44 defines a wind powered electrical generation system including, among other things, a tower including an elevator having a carriage, with the elevator being configured to move the carriage between a bottom and a top of the tower, a first member rotatably connected to the carriage, with the first member having an axis of rotation substantially parallel to the direction of movement of the carriage, a second member connected to the first member, with the second member having a first end and a second end, a hub assembly connected to the first end of the second member, with the hub assembly including a plurality of spars, an airfoil is connected to each spar, and a generator connected to the second end of the second member, wherein the spars and the second member will rotate as wind passes the airfoils, thereby powering the generator.

The prior art of record does not disclose or suggest the above noted features of claim 44. Specifically, according to the Office Action, the Salter '631 patent has been modified to have a generator housing located upwind of a rotor as taught by the Abe '434 patent. Accordingly, the combination as set forth in the Office Action does not include any tower including an elevator or a carriage as such is not disclosed in the Salter '631 patent nor added to the teaching of the Salter '631 patent as set forth in the Office Action. Accordingly, claim 44 is in condition for allowance.

#### Claim 45

Claim 45 depends from claim 44 and further defines the elevator as including a track, with the track including a first side guide having a first vertical strip and a second side guide having a second vertical strip; and the carriage as including a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track to move between the top and bottom of the tower. The prior art of record does not disclose or suggest the above noted features of claim 45.

First, claim 45 depends from claim 44, and since claim 44 defines patentable subject matter as discussed above, claim 45 defines patentable subject matter. Second, as discussed

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above regarding claim 44, the combination of the Salter '631 patent and the Abe '434 patent as disclosed in the Office Action does not include any elevator, track or carriage such that the combination set forth in the Office Action does not include the elements of claim 45. Accordingly, claim 45 is in condition for allowance.

#### Claim 50

Claim 50 depends from claim 44 and further defines the carriage as including a pivot ring having a plurality of roller bearings configured to accept the first member thereon, thereby allowing the first member to rotate. The prior art of record does not disclose or suggest the above noted features of claim 50.

First, claim 50 depends from claim 44, and since claim 44 defines patentable subject matter as discussed above, claim 50 defines patentable subject matter. Second, as discussed above regarding claim 44, the combination of the Salter '631 patent and the Abe '434 patent as disclosed in the Office Action does not include any carriage such that the combination set forth in the Office Action does not include the elements of claim 50. Accordingly, claim 50 is in condition for allowance.

#### Claim 52

Claim 52 depends from claim 44 and further defines the wind powered electrical generation system as including a carriage raising assembly including a winch, a cable and a pulley, wherein the pulley is connected to an upper portion of the tower and the winch is connected to a lower portion of the tower, and wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage. The prior art of record does not disclose or suggest the above noted features of claim 52.

First, claim 52 depends from claim 44, and since claim 44 defines patentable subject matter as discussed above, claim 52 defines patentable subject matter. Second, as discussed above regarding claim 44, the combination of the Salter '631 patent and the Abe '434 patent as disclosed in the Office Action does not include any carriage or a carriage raising assembly such

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that the combination set forth in the Office Action does not include the elements of claim 52. Accordingly, claim 52 is in condition for allowance.

#### Claims 54 and 55

Claim 54 depends from claim 44 and further defines the second member is connected to an end of the first member at a position off center from an axis of the first member. The prior art of record does not disclose or suggest the above noted features of claim 54.

First, claim 54 depends from claim 44, and since claim 44 defines patentable subject matter as discussed above, claim 54 defines patentable subject matter. Second, the combination of the Salter '631 patent and the Abe '434 patent does not disclose or suggest a second member connected to an end of a first member at a position off center from an axis of a first member as defined in claim 54. Accordingly, claim 54 is in condition for allowance.

Claim 55 depends from claim 54, and since claim 54 defines patentable subject matter as discussed above, claim 55 defines patentable subject matter. Accordingly, claim 55 is also in condition for allowance.

#### Claim 56

Claim 56 depends from claim 55 and further defines the airfoils as being configured to pivot about the spars and to slide longitudinally along the spars, with the airfoils being biased towards a first end of the spars connected to the hub, each spar including a cam member adjacent a second end of the spar opposite to the hub, each airfoil including a cam surface configured to engage the cam member on the spar, and the cam member and the cam surface being configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars. The prior art of record does not disclose or suggest the above noted features of claim 56.

First, claim 56 depends from claim 55, and since claim 55 defines patentable subject matter as discussed above, claim 56 defines patentable subject matter. Second, the combination of the Salter '631 patent and the Abe '434 patent as set forth in the Office Action does not include any airfoils that are configured to pivot about spars (as admitted in the Office

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Action during the allowance of claim 40). Accordingly, claim 56 is in condition for allowance.

### Conclusion

Accordingly, claims 39, 41-45, 50, 52 and 54-56 are allowable over the Salter '631 patent in view of the Abe '434 patent, and the Board is requested to reverse the rejection of these claims.

#### **F. Rejection of claim 51 as being unpatentable over the Salter '631 patent in view of the Abe '434 patent and the Douthit '507 patent**

Claim 51 has been rejected under 35 U.S.C. §103(a) as being unpatentable over the Salter '631 patent in view of the Abe '434 patent and the Douthit '507 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a *prima facie* case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a *prima facie* case of obviousness to reject claim 51 over the Salter '631 patent in view of the Abe '434 patent and the Douthit '507 patent.

### Claim 51

Claim 51 depends from claim 44 and further defines the wind powered electrical generation system by stating that the carriage includes a plurality of contacts configured to contact a rotating portion of the first member to allow power to be transferred from a first member to a remote point.

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The prior art of record does not disclose or suggest the above noted features of claim 51. First, claim 51 depends from claim 44, and since claim 44 defines nonobvious patentable subject matter as defined above, claim 51 defines patentable subject matter. Second, the combination of the Salter '631 patent and the Abe '434 patent does not disclose any carriage. Accordingly, a combination of the Salter '631 patent and the Abe '434 patent and the Douthit '507 patent as disclosed in the Office Action would not include any carriage. Accordingly, claim 51 is in condition for allowance.

Accordingly, claim 51 is allowable over the Salter '631 patent in view of the Abe '434 patent and the Douthit '507 patent, and the Board is requested to reverse the rejection of these claims.

**G. Rejection of claim 53 as being unpatentable over the Abe '434 patent in view of the Barnes '631 patent**

Claim 53 has been rejected under 35 U.S.C. §103(a) as being unpatentable over the the Abe '434 patent in view of the Barnes '631 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a *prima facie* case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a *prima facie* case of obviousness to reject claim 53 over the Abe '434 patent in view of the Barnes '631 patent.

Claim 53

Claim 53 depends from claim 44 and further defines the wind powered electrical



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generation system by stating that the airfoils are configured to pivot about the spars and to slide longitudinally along the spars, and the airfoils are biased towards a first end of the spars connected to the hub. Each spar includes a cam member adjacent a second end of the spar opposite to the hub, and each airfoil includes a cam surface configured to engage the cam member on the spar. The cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.

The prior art of record does not disclose or suggest the above noted features of claim 53. First, claim 53 depends from claim 44, and since claim 44 defines unobvious patentable subject matter as discussed above, claim 53 defines patentable subject matter. Furthermore, as discussed above in regard to claim 44, since the blades 19 of the Salter '631 patent are fixed in position by the rim 13, there is no suggestion or motivation for allowing the blades 19 to slide outward because they would not be able to move outward because of the rim 13. Accordingly, claim 53 is in condition for allowance.

Accordingly, claim 53 is allowable over the Abe '434 patent in view of the Barnes '631 patent, and the Board is requested to reverse the rejection of these claims.

**H. Rejection of claim 57 as being unpatentable over the Abe '434 patent in view of the Fergusson '346 patent**

Claim 57 has been rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe '434 patent in view of the Fergusson '346 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a *prima facie* case of obviousness, not on the Applicant to provide reasons for patentability. See *In re*

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*Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a prima facie case of obviousness to reject claim 57 over the Abe '434 patent in view of the Fergusson '346 patent.

#### Claim 57

Claim 57 defines a portable wind powered generation system including, among other things, a tower having an upper tower section and a lower tower section, with the upper tower section and the lower tower section being removably connected, a wind powered generator and an elevator connected to the tower, the elevator being able to move between the lower tower section and the upper tower section of the tower, wherein the wind powered generator is configured to be connected to the elevator to raise the wind powered generator from the lower tower section to the upper tower section and wherein the wind powered generator can be unconnected from the elevator and the upper tower section can be unconnected from the lower tower section, thereby allowing the portable wind powered generator assembly to be easily transported and erected.

The prior art of record does not disclose or suggest the above noted features of claim 57. According to the Office Action:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined tower and to provide the tower comprising the lower tower section and the upper tower section as taught by Douthit for the purpose of providing a self containing system that is easy to transport and to install at site without the need of providing an additional crane or other hauling means.

Paragraph 11, Office Action mailed January 5, 2005. The rejection of claim 57 is not a *prima facie* case of obviousness because the final Office Action apparently uses teachings from a third reference, the Douthit '507 patent, without explaining which features of the Douthit '507 patent are taught. Furthermore, the final Office Action did not provide any suggestion or motivation for combining the Fergusson '346 patent with the Abe '434 patent, or even a combination of the Abe '434 patent and the Fergusson '346 patent. Nevertheless, there is no reason to combine the Abe '434 patent with the Fergusson '346 patent because if such a

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combination was made, the nacelle 2 of the Abe '434 patent would not be able to be raised and lowered along the guides 1a of the tower 1. As illustrated in Figs. 6 and 7 of the Fergusson '346 patent, the periphery of the upper section 225 of the frame 213 telescopes into the lower section 223 of the frame 213. Furthermore, the periphery of the upper frame 225 is smaller than the periphery of the lower section 223. Therefore, any guides used on the tower 213 as disclosed by the Fergusson '346 patent would not be colinear as the upper section 225 moves into the lower section 223. Therefore, if the guides 1a were not colinear, the mount 12 as disclosed in the Abe '434 patent would not be able to move up and down the frame. Accordingly, there is no suggestion or motivation for combining the Abe '434 patent and the Fergusson '346 patent.

In regard to the third criterion of obviousness, the prior art of record does not disclose or suggest the above noted features of claim 57. Specifically, even if there was a suggestion or motivation for combining the Abe '434 patent with the Fergusson '346 patent, the resulting combination would not include a tower having an upper tower section and a lower tower section removably connected. Furthermore, such a combination would not include a wind powered generator that can be unconnected from an elevator and a lower tower section that can be unconnected from an upper tower section. Accordingly, claim 57 is in condition for allowance.

Accordingly, claim 57 is allowable over the Abe '434 patent in view of the Fergusson '346 patent, and the Board is requested to reverse the rejection of these claims.

**H. Rejection of claims 72 and 74 as being unpatentable over the Abe '434 patent in view of the Barnes '631 patent**

Claims 72 and 74 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Abe '434 patent in view of the Barnes '631 patent. In order to establish a *prima facie* case of obviousness, three criteria must be met. M.P.E.P. §706.02(j). Firstly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference

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teachings. *In re Fine*, 5 U.S.P.Q.2d 1586 (Fed. Cir. 1988). Secondly, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Thirdly, the prior art reference (or references) must teach or suggest all the claim limitations. *In re Royka*, 180 U.S.P.Q. 550 (C.C.P.A. 1974). The burden is on the Examiner to create a prima facie case of obviousness, not on the Applicant to provide reasons for patentability. See *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Applicant respectfully asserts that the Examiner has not created a prima facie case of obviousness to reject claims 72 and 74 over the Abe '434 patent in view of the Barnes '631 patent.

#### Claim 72

Claim 72 defines a wind powered generator including, among other things, a housing and a rod configured to rotate within the housing, at least two spars connected to a hub on the rod and extending radially therefrom, and an airfoil connected to each of the spars at a location distal the rod. The airfoils are configured to pivot about the spars and to slide longitudinally along the spars. The airfoils being biased towards a first end of the spars connected to the hub. Each spar includes a cam member adjacent a second end of the spar opposite to the hub and each airfoil including a cam surface configured to engage the cam member on the spar. The cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars. A biasing member biases the airfoils towards the first end of the spars connected to the hub, and the biasing member biases the airfoils in a biasing direction non-parallel to a sliding direction of the airfoils, the sliding direction being parallel to a sliding direction of the airfoils along the spars.

The prior art of record does not disclose or suggest the above noted features of claim 72. The prior art of record does not disclose or suggest a biasing member that biases an airfoil towards a first end of a spar connected to a hub, with the biasing member biasing the airfoils in a biasing direction non-parallel to a sliding direction of the airfoils, the sliding direction being parallel to a sliding direction of the airfoils along the spars. Specifically, the Barnes '631 patent discloses that the rod 16 biases the blade tip portion 5 towards the hub arrangement 3

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such that the spring 17 and the rod 16 bias the blade tip portion 5 in a direction parallel to a sliding direction of the blade tip portion 5, not in a direction non-parallel to the sliding direction of the airfoil as claimed in claim 72. Accordingly, even if there was a suggestion or motivation for combining the Abe '434 patent and the Barnes '631 patent, any resulting combination would not include all of the subject matter of claim 72. Accordingly, claim 72 is in condition for allowance.

#### Claim 74

Claim 74 defines a wind power generator including, among other things, a housing, a rod configured to rotate within the housing, at least two spars connected to a hub on the rod and extending radially therefrom, and an airfoil connected to each of the spars at a location distal the rod. The airfoils are configured to pivot about the spars and to slide longitudinally along the spars. The airfoils are biased towards a first end of the spars connected to the hub. Each spar includes a cam member adjacent a second end of the spar opposite to the hub, and each airfoil includes a cam surface configured to engage the cam member on the spar, wherein the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars, wherein a force from wind applied to the airfoil lessens over an entire length of the spars as the airfoils pivot.

The prior art of record does not disclose or suggest the above noted features of claim 74. Specifically, the prior art of record does not disclose or suggest that a force from wind applied to an airfoil over an entire length of spars lessens as airfoils pivot. According to the Barnes '631 patent, the blades 4 do not pivot. Accordingly, a force of wind applied to the blades 4 does not lessen over an entire length of the spars as the blade tip portion 5 pivots. Therefore, the blade 4, which is over a substantial portion of a spar, does not pivot and, therefore, force of wind applied to the blades does not lessen as the blade tip portion 5 pivots. Accordingly, claim 74 is in condition for allowance.

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### Conclusion

Accordingly, claim 72 and 74 are allowable over the Abe '434 patent in view of the Barnes '631 patent, and the Board is requested to reverse the rejection of these claims.

### **VIII. Conclusion**

Each appealed claim recites features that are not disclosed by any of the cited references and it would not have been obvious to modify the cited references to include the recited features of the appealed claims. The references upon which the Examiner relies in the Examiner's rejections of the finally rejected claims does not disclose or suggest the claimed pivot ring, upwind generator, tower, and cam surface and cam member as each individually claimed. Applicant's invention resolves problems and inconveniences experienced in the prior art, and therefore represents a significant advancement in the art. Applicant earnestly requests that the Examiner's final rejection of claims 9, 10, 15-19, 24-28, 39, 41-45, 50-57, 71, 72 and 74 inclusive, be reversed and that the application be passed to issuance forthwith.

Respectfully submitted,

6/1/05  
Date

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### **Appendix of Claims (37 CFR §1.192(c)(9))**

1. A portable wind powered generator tower for supporting a wind powered generator comprising:

a lower tower section including a first vertical column, a second vertical column and a third vertical column, the lower tower further including at least three cross braces, with two of the cross braces being connected to each of the first vertical column, the second vertical column and the third vertical column; and

an upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column; and

an elevator configured to be connected to a wind powered generator to raise and lower the wind powered generator from the lower tower section to the upper tower section;

wherein the lower tower section is configured to be connected to the upper tower section by connecting a top of the first vertical column of the lower tower section directly below the upper tower section to a bottom of the first upper column of the upper tower section, connecting a top of the second vertical column of the lower tower section directly below the upper tower section to a bottom of the second upper column of the upper tower section, and connecting a top of the third vertical column of the lower tower section directly below the upper tower section to a bottom of the third upper column of the upper tower section; and

wherein the elevator is fully assembled and ready to raise and lower the wind powered generator when the lower tower section is connected to the upper tower section.

2. The portable wind powered generator tower of claim 1, wherein:

the elevator includes a vertical track and a carriage; and

the carriage is configured to move along the vertical track to raise and lower the wind powered generator.

3. The portable wind powered generator tower of claim 2, wherein:  
the vertical track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and  
the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the vertical track.
4. The portable wind powered generator tower of claim 3, wherein:  
the first vertical strip is comprised of a plurality of first vertical strip portions;  
the second vertical strip is comprised of a plurality of second vertical strip portions;  
the first vertical column of the lower tower section includes one of the first vertical strip portions;  
the first upper column includes another one of the first vertical strip portions;  
the second vertical column of the one lower tower section includes one of the second vertical strip portions;  
the second upper column includes another one of the second vertical strip portions; and  
the first vertical strip and the second vertical strip are fully assembled when the at least one lower tower section is connected to the upper tower section.
5. The portable wind powered generator tower of claim 2, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to the upper tower section and the winch is connected to the lower tower section; and  
wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.



6. The portable wind powered generator tower of claim 2, wherein:  
the carriage includes a pivot ring adapted to allow the wind powered generator to pivot about the carriage when the wind powered generator is located at a top of the upper tower section.
7. The portable wind powered generator tower of claim 6, wherein:  
the pivot ring includes a plurality of roller bearings configured to accept a portion of the wind powered generator thereon, thereby allowing the wind powered generator to rotate.
8. The portable wind powered generator tower of claim 2, wherein:  
the carriage includes a plurality of contacts configured to contact a rotating portion of the wind powered generator to allow power to be transferred from the wind powered generator to a remote point.
9. A wind powered generator support assembly for supporting a wind powered generator comprising:  
a tower; and  
a vertical elevator on the tower, the elevator including a track and a carriage configured to move along the track, the carriage including a pivot ring configured to accept the wind powered generator therein for allowing the wind powered generator to rotate about the carriage;  
wherein the vertical elevator is configured to vertically lift the wind powered generator with the carriage to position the wind powered generator at a top of the tower.
10. The wind powered generator support assembly of claim 9, wherein:  
the track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track.

11. A wind powered generator support assembly for supporting a wind powered generator comprising:

a tower; and

a vertical elevator on the tower, the elevator including a track and a carriage configured to move along the track, the carriage including a pivot ring configured to accept the wind powered generator therein for allowing the wind powered generator to rotate about the carriage;

wherein the vertical elevator is configured to vertically lift the wind powered generator with the carriage to position the wind powered generator at a top of the tower;

the tower comprising a lower tower section and an upper tower section;

the lower tower section including a first vertical column, a second vertical column and a third vertical column, the lower tower section further including at least three cross braces, with two of the cross braces being connected to each of the first vertical column, the second vertical column and the third vertical column; and

the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column;

the lower tower section being configured to be connected to the upper tower section by connecting a top of the first vertical column of the lower tower section directly below the upper tower section to a bottom of the first upper column of the upper tower section, connecting a top of the second vertical column of the lower tower section directly below the upper tower section to a bottom of the second upper column of the upper tower section, and connecting a top of the third vertical column of the lower tower section directly below the

upper tower section to a bottom of the third upper column of the upper tower section; and  
the track being fully assembled and ready to raise and lower the wind powered generator when the lower tower section is connected to the upper tower section.

12. The wind powered generator support assembly of claim 11, wherein:  
the vertical track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and  
the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the vertical track. .

13. The wind powered generator support assembly of claim 12, wherein:  
the first vertical strip is comprised of a plurality of first vertical strip portions;  
the second vertical strip is comprised of a plurality of second vertical strip portions;  
the first vertical column of the lower tower section includes one of the first vertical strips;  
the first upper column includes one of the first vertical strips;  
the second vertical column of the one lower tower section includes one of the second vertical strips;  
the second upper column includes one of the second vertical strips; and  
the first vertical strip and the second vertical strip are fully assembled when the at least one lower tower section is connected to the upper tower section.

14. The wind powered generator support assembly of claim 13, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to the upper tower section of the tower and the winch is connected to the lower tower section; and  
wherein the cable is connected to the winch and the carriage, the cable further being

wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.

15. The wind powered generator support assembly of claim 9, wherein:

the pivot ring includes a plurality of roller bearings configured to accept a portion of the wind powered generator thereon, thereby allowing the wind powered generator to rotate.

16. The wind powered generator support assembly of claim 9, wherein:

the carriage includes a plurality of contacts configured to contact a rotating portion of the wind powered generator to allow power to be transferred from the wind powered generator to a remote point.

17. The wind powered generator support assembly of claim 9, further including:

a carriage raising assembly including a winch, a cable and a pulley;

wherein the pulley is connected to an upper portion of the tower and the winch is connected to a lower portion of the tower; and

wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.

18. A wind powered electrical generation system comprising:

a tower including a vertical elevator, the vertical elevator having a track and a carriage configured to move along the track; and

a wind powered generator configured to be connected to the carriage, the wind powered generator including a plurality of airfoils and an electric generator;

wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower; and

wherein the wind powered generator can be removed from within the carriage after the carriage has been lowered.

19. The wind powered electrical generation system of claim 18, wherein:

the track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track.

20. A wind powered electrical generation system comprising:

a tower including a vertical elevator, the vertical elevator having a track and a carriage configured to move along the track; and

a wind powered generator configured to be connected to the carriage, the wind powered generator including a plurality of airfoils and an electric generator;

wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower; and

wherein the wind powered generator can be removed from within the carriage after the carriage has been lowered;

the tower comprising a lower tower section and an upper tower section;

the lower tower section including a first vertical column, a second vertical column and a third vertical column, the lower tower section further including at least three cross braces, with two of the cross braces being connected to each of the first vertical column, the second vertical column and the third vertical column; and

the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being

substantially parallel and the third upper column converging towards the first upper column and the second upper column;

the lower tower section being configured to be connected to the upper tower section by connecting a top of the first vertical column of the lower tower section directly below the upper tower section to a bottom of the first upper column of the upper tower section, connecting a top of the second vertical column of the lower tower section directly below the upper tower section to a bottom of the second upper column of the upper tower section, and connecting a top of the third vertical column of the lower tower section directly below the upper tower section to a bottom of the third upper column of the upper tower section; and

the track being fully assembled and ready to raise and lower the wind powered generator when the lower tower section is connected to the upper tower section.

21. The wind powered electrical generation system of claim 20, wherein:

the vertical track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the vertical track.

22. The wind powered electrical generation system of claim 21, wherein:

the first vertical strip is comprised of a plurality of first vertical strip portions;

the second vertical strip is comprised of a plurality of second vertical strip portions;

the first vertical column of the lower tower section includes one of the first vertical strips;

the first upper column includes one of the first vertical strips;

the second vertical column of the one lower tower section includes one of the second vertical strips;

the second upper column includes one of the second vertical strips; and

the first vertical strip and the second vertical strip are fully assembled when the at least one lower tower section is connected to the upper tower section.

23. The wind powered electrical generation system of claim 22, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to the upper tower section and the winch is connected to the lower tower section; and

wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.

24. The wind powered electrical generation system of claim 18, wherein:  
the carriage includes a pivot ring configured to accept the wind powered generator therein; and

the pivot ring includes a plurality of roller bearings configured to accept a portion of the wind powered generator thereon, thereby allowing the wind powered generator to rotate.

25. The wind powered electrical generation system of claim 18, wherein:  
the carriage includes a plurality of contacts configured to contact a rotating portion of the wind powered generator to allow power to be transferred from the wind powered generator to a remote point.

26. The wind powered electrical generation system of claim 18, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to an upper portion of the tower and the winch is connected to a lower portion of the tower; and

wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.

27. The wind powered electrical generation system of claim 18, wherein:  
the wind powered generator further includes:  
a housing;  
a rod configured to rotate within the housing; and  
at least two spars connected to the rod and extending radially therefrom;  
wherein one of the airfoils is connected to each of the spars.
28. The wind powered electrical generation system of claim 27, wherein:  
the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;  
the airfoils are biased towards a first end of the spars connected to the rod;  
each spar includes a cam member adjacent a second end of the spar opposite to the rod;  
each airfoil includes a cam surface configured to engage the cam member on the spar;  
the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.
29. A wind powered electrical generation system comprising:  
a tower including a vertical elevator, the vertical elevator having a track and a carriage configured to move along the track; and  
a wind powered generator configured to be connected to the carriage, the wind powered generator including a plurality of airfoils and an electric generator;



wherein the wind powered generator can be removably placed within the carriage after the tower has been erected and lifted vertically with the carriage to position the wind powered generator at a top of the tower;

wherein the wind powered generator can be removed from within the carriage after the carriage has been lowered;

wherein the wind powered generator includes a vertical leg; and

wherein the vertical leg is configured to be placed within the carriage and rotate relative to the carriage when the wind powered generator is placed within the carriage.

30. The wind powered electrical generation system of claim 29, wherein:

the wind powered generator further includes a horizontal leg including a first shaft and a second shaft, the first shaft being rotatable within the second shaft;

the second shaft of the horizontal leg is connected to an end of the vertical leg;

the airfoils are interconnected to the first shaft; and

the generator is connected to the second shaft.

31. The wind powered electrical generation system of claim 30, wherein:

the second shaft of the horizontal leg is connected to an end of the vertical leg at a position off center from an axis of the vertical leg.

32. The wind powered electrical generation system of claim 31, wherein:

the first shaft includes a hub fixed to an end thereof; and

spars are connected to the hub, the spars extending from the hub in a position substantially perpendicular to the first shaft.

33. The wind powered electrical generation system of claim 32, wherein:

the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils are biased towards a first end of the spars connected to the hub;  
each spar includes a cam member adjacent a second end of the spar opposite to the hub;  
each airfoil includes a cam surface configured to engage the cam member on the spar;  
the cam member and the cam surface are configured to engage to thereby rotate the  
airfoils relative to the spars as the airfoils move along the spars towards the second end of the  
spars.

34. A wind powered generator comprising:

a housing;  
a rod configured to rotate within the housing;  
at least two spars connected to a hub on the rod and extending radially therefrom;  
an airfoil connected to each of the spars at a location distal the rod;  
the entire airfoil on each spar being configured to pivot about the spars and to slide  
longitudinally along the spars;

the airfoils being biased towards a first end of the spars connected to the hub;  
each spar including a cam member adjacent a second end of the spar opposite to the  
hub; and  
each airfoil including a cam surface configured to engage the cam member on the spar;  
wherein the cam member and the cam surface are configured to engage to thereby  
rotate the airfoils relative to the spars as the airfoils move along the spars towards the second  
end of the spars.

35. The wind powered generator of claim 34, further including:

an electrical generator connected to the housing.

36. The wind powered generator of claim 35, further including:

a vertical leg connected to the housing;

wherein the housing is connected to an end of the vertical leg at a position off center from an axis of the vertical leg.

37. The wind powered generator of claim 34, wherein:  
the rod includes a hub fixed to an end thereof; and  
the spars are connected to the hub, with the spars extending from the hub in a position substantially perpendicular to the rod.

38. (canceled)

39. A wind powered generator comprising:  
a housing;  
a rod configured to rotate within the housing;  
at least six spars connected to the rod and extending radially therefrom;  
an airfoil connected to each of the spars at a location distal the rod; and  
a generator located upwind of the spars and interconnected to the rod;  
wherein the spars and the rod will rotate as wind passes the airfoils, thereby powering the generator.

40. A wind powered generator comprising:  
a housing;  
a rod configured to rotate within the housing;  
at least six spars connected to the rod and extending radially therefrom;  
an airfoil connected to each of the spars at a location distal the rod; and  
a generator located upwind of the spars and interconnected to the rod;  
wherein the spars and the rod will rotate as wind passes the airfoils, thereby powering the generator;

the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils are biased towards a first end of the spars connected to the hub;

each spar includes a cam member adjacent a second end of the spar opposite to the hub;

each airfoil includes a cam surface configured to engage the cam member on the spar;

and

the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.

41. The wind powered generator of claim 39, further including:  
an electrical generator connected to the housing.

42. The wind powered generator of claim 39, further including:  
a vertical leg connected to the housing;  
wherein the housing is connected to an end of the vertical leg at a position off center from an axis of the vertical leg.

43. The wind powered generator of claim 39, wherein:  
the rod includes a hub fixed to an end thereof; and  
the spars are connected to the hub, with the spars extending from the hub in a position substantially perpendicular to the rod.

44. A wind powered electrical generation system comprising:  
a tower including an elevator having a carriage, the elevator being configured to move the carriage between a bottom and a top of the tower;  
a first member rotatably connected to the carriage, the first member having an axis of rotation substantially parallel to the direction of movement of the carriage;

a second member connected to the first member, the second member having a first end and a second end;

a hub assembly connected to the first end of the second member, the hub assembly including a plurality of spars;

an airfoil connected to each spar; and

a generator connected to the second end of the second member;

wherein the spars and the second member will rotate as wind passes the airfoils, thereby powering the generator.

45. The wind powered electrical generation system of claim 44, wherein:

the elevator includes a track, the track including a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track to move between the top and bottom of the tower.

46. A wind powered electrical generation system comprising:

a tower including an elevator having a carriage, the elevator being configured to move the carriage between a bottom and a top of the tower;

a first member rotatably connected to the carriage, the first member having an axis of rotation substantially parallel to the direction of movement of the carriage;

a second member connected to the first member, the second member having a first end and a second end;

a hub assembly connected to the first end of the second member, the hub assembly including a plurality of spars;

an airfoil connected to each spar; and

a generator connected to the second end of the second member;

wherein the spars and the second member will rotate as wind passes the airfoils, thereby powering the generator;

the tower comprising a lower tower section and an upper tower section;

the lower tower section including a first vertical column, a second vertical column and a third vertical column, the lower tower section further including at least three cross braces, with two of the cross braces being connected to each of the first vertical column, the second vertical column and the third vertical column; and

the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column;

the lower tower section being configured to be connected to the upper tower section by connecting a top of the first vertical column of the lower tower section directly below the upper tower section to a bottom of the first upper column of the upper tower section, connecting a top of the second vertical column of the lower tower section directly below the upper tower section to a bottom of the second upper column of the upper tower section, and connecting a top of the third vertical column of the lower tower section directly below the upper tower section to a bottom of the third upper column of the upper tower section;

the elevator including a track upon which the carriage moves; and

the track being fully assembled and ready to raise and lower the wind powered generator when the lower tower section is connected to the upper tower section.

47. The wind powered electrical generation system of claim 46, wherein:

the track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the track.

48. The wind powered electrical generation system of claim 47, wherein:  
the first vertical strip is comprised of a plurality of first vertical strip portions;  
the second vertical strip is comprised of a plurality of second vertical strip portions;  
the first vertical column of the lower tower section includes one of the first vertical strips;  
the first upper column includes one of the first vertical strips;  
the second vertical column of the one lower tower section includes one of the second vertical strips;  
the second upper column includes one of the second vertical strips; and  
the first vertical strip and the second vertical strip are fully assembled when the at least one lower tower section is connected to the upper tower section.
49. The wind powered electrical generation system of claim 48, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to the upper tower section and the winch is connected to the lower tower section; and  
wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.
50. The wind powered electrical generation system of claim 44, wherein:  
the carriage includes a pivot ring having a plurality of roller bearings configured to accept the first member thereon, thereby allowing the first member to rotate.
51. The wind powered electrical generation system of claim 44, wherein:  
the carriage includes a plurality of contacts configured to contact a rotating portion of the first member to allow power to be transferred from the first member to a remote point.

52. The wind powered electrical generation system of claim 44, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to an upper portion of the tower and the winch is connected to a lower portion of the tower; and  
wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.
53. The wind powered electrical generation system of claim 44, wherein:  
the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;  
the airfoils are biased towards a first end of the spars connected to the hub;  
each spar includes a cam member adjacent a second end of the spar opposite to the hub;  
each airfoil includes a cam surface configured to engage the cam member on the spar;  
the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.
54. The wind powered electrical generation system of claim 44, wherein:  
the second member is connected to an end of the first member at a position off center from an axis of the first member.
55. The wind powered electrical generation system of claim 54, wherein:  
the spars extend from the hub in a position substantially perpendicular to the second member.
56. The wind powered electrical generation system of claim 55, wherein:



the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils are biased towards a first end of the spars connected to the hub;

each spar includes a cam member adjacent a second end of the spar opposite to the hub;

each airfoil includes a cam surface configured to engage the cam member on the spar;

the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.

57. A portable wind powered generation system comprising:

a tower having an upper tower section and a lower tower section, the upper tower section and the lower tower section being removably connected;

a wind powered generator; and

an elevator connected to the tower, the elevator being able to move between the lower tower section and the upper tower section of the tower;

wherein the wind powered generator is configured to be connected to the elevator to raise the wind powered generator from the lower tower section to the upper tower section; and

wherein the wind powered generator can be unconnected from the elevator and the upper tower section can be unconnected from the lower tower section, thereby allowing the portable wind powered generator assembly to be easily transported and erected.

58. A portable wind powered generation system comprising:

a tower having an upper tower section and a lower tower section, the upper tower section and the lower tower section being removably connected;

a wind powered generator; and

an elevator connected to the tower, the elevator being able to move between the lower tower section and the upper tower section of the tower;

wherein the wind powered generator is configured to be connected to the elevator to raise the wind powered generator from the lower tower section to the upper tower section; and

wherein the wind powered generator can be unconnected from the elevator and the upper tower section can be unconnected from the lower tower section, thereby allowing the portable wind powered generator assembly to be easily transported and erected;

the lower tower section including a first vertical column, a second vertical column and a third vertical column, the lower tower section further including at least three cross braces, with two of the cross braces being connected to each of the first vertical column, the second vertical column and the third vertical column; and

the upper tower section including a first upper column, a second upper column and a third upper column, with the first upper column and the second upper column being substantially parallel and the third upper column converging towards the first upper column and the second upper column;

the lower tower section being configured to be connected to the upper tower section by connecting a top of the first vertical column of the lower tower section directly below the upper tower section to a bottom of the first upper column of the upper tower section, connecting a top of the second vertical column of the lower tower section directly below the upper tower section to a bottom of the second upper column of the upper tower section, and connecting a top of the third vertical column of the lower tower section directly below the upper tower section to a bottom of the third upper column of the upper tower section;

the elevator including a carriage and a track upon which the carriage moves; and

the track being fully assembled and ready to raise and lower the wind powered generator when the one lower tower section is connected to the upper tower section.

59. The wind powered electrical generation system of claim 58, wherein:

the vertical track includes a first side guide having a first vertical strip and a second side guide having a second vertical strip; and

the carriage includes a first side groove configured to accept the first vertical strip and a second side groove configured to accept the second vertical strip, thereby allowing the carriage to slide along the first vertical strip and the second vertical strip of the vertical track.

60. The wind powered electrical generation system of claim 59, wherein:  
the first vertical strip is comprised of a plurality of first vertical strip portions;  
the second vertical strip is comprised of a plurality of second vertical strip portions;  
the first vertical column of the lower tower section includes one of the first vertical strips;  
the first upper column includes one of the first vertical strips;  
the second vertical column of the one lower tower section includes one of the second vertical strips;  
the second upper column includes one of the second vertical strips; and  
the first vertical strip and the second vertical strip are fully assembled when the at least one lower tower section is connected to the upper tower section.

61. The wind powered electrical generation system of claim 60, further including:  
a carriage raising assembly including a winch, a cable and a pulley;  
wherein the pulley is connected to the upper tower section and the winch is connected to the lower tower section; and  
wherein the cable is connected to the winch and the carriage, the cable further being wrapped about the pulley whereby the carriage can be raised by rotating the winch to thereby pull the cable about the pulley and raise the carriage.

62. The wind powered electrical generation system of claim 61, wherein:  
the carriage includes a pivot ring having a plurality of roller bearings configured to accept a portion of the wind powered generator thereon, thereby allowing the wind powered generator to rotate.

63. The wind powered electrical generation system of claim 62, wherein:  
the carriage includes a plurality of contacts configured to contact a rotating portion of the wind powered generator to allow power to be transferred from the wind powered generator to a remote point.
64. The wind powered electrical generation system of claim 63, wherein:  
the wind powered generator includes:  
a housing;  
a rod configured to rotate within the housing;  
at least two spars connected to the rod and extending radially therefrom; and  
the airfoils are connected to each of the spars.
65. The wind powered electrical generation system of claim 64, wherein:  
the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;  
the airfoils are biased towards a first end of the spars connected to the hub;  
each spar includes a cam member adjacent a second end of the spar opposite to the hub;  
each airfoil includes a cam surface configured to engage the cam member on the spar;  
the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.
66. The wind powered electrical generation system of claim 65, wherein:  
the wind powered generator further includes a vertical leg;  
the vertical leg is configured to be placed within the carriage and rotate relative to the carriage when the wind powered generator assembly is placed within the carriage.

67. The wind powered electrical generation system of claim 66, wherein:  
the wind powered generator further includes a horizontal leg including a first shaft and a second shaft, the first shaft being rotatable within the second shaft;  
the second shaft of the horizontal leg is connected to an end of the vertical leg;  
the airfoils are interconnected to the first shaft; and  
the generator is connected to the second shaft.
68. The wind powered electrical generation system of claim 67, wherein:  
the second shaft of the horizontal leg is connected to an end of the first rod of the vertical leg at a position off center from an axis of the vertical leg.
69. The wind powered electrical generation system of claim 68, wherein:  
the first shaft includes a hub fixed to an end thereof; and  
spars are connected to the hub, the spars extending from the hub in a position substantially perpendicular to the first shaft.
70. The wind powered electrical generation system of claim 69, wherein:  
the airfoils are configured to pivot about the spars and to slide longitudinally along the spars;  
the airfoils are biased towards a first end of the spars connected to the hub;  
each spar includes a cam member adjacent a second end of the spar opposite to the hub;  
each airfoil includes a cam surface configured to engage the cam member on the spar;  
the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars.
71. The wind powered electrical generation system of claim 18, wherein:

the carriage is fixed to the track whereby the carriage continues to be connected to the track of the tower at a lowest point of travel of the carriage.

72. A wind powered generator comprising:

a housing;

a rod configured to rotate within the housing;

at least two spars connected to a hub on the rod and extending radially therefrom;

an airfoil connected to each of the spars at a location distal the rod;

the airfoils being configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils being biased towards a first end of the spars connected to the hub;

each spar including a cam member adjacent a second end of the spar opposite to the hub; and

each airfoil including a cam surface configured to engage the cam member on the spar;

wherein the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars; and

wherein a biasing member biases the airfoils towards the first end of the spars connected to the hub, the biasing member biasing the airfoils in a biasing direction non-parallel to a sliding direction of the airfoils, the sliding direction being parallel to a sliding direction of the airfoils along the spars.

73. A wind powered generator comprising:

a housing;

a rod configured to rotate within the housing;

at least two spars connected to a hub on the rod and extending radially therefrom;

an airfoil connected to each of the spars at a location distal the rod;

the airfoils being configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils being biased towards a first end of the spars connected to the hub;

each spar including a cam member adjacent a second end of the spar opposite to the hub; and

each airfoil including a cam surface configured to engage the cam member on the spar;

wherein the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars; and

wherein the spars extend through the airfoils at a position closer to a leading edge of rotation of the airfoils than a trailing edge.

74. A wind powered generator comprising:

a housing;

a rod configured to rotate within the housing;

at least two spars connected to a hub on the rod and extending radially therefrom;

an airfoil connected to each of the spars at a location distal the rod;

the airfoils being configured to pivot about the spars and to slide longitudinally along the spars;

the airfoils being biased towards a first end of the spars connected to the hub;

each spar including a cam member adjacent a second end of the spar opposite to the hub; and

each airfoil including a cam surface configured to engage the cam member on the spar;

wherein the cam member and the cam surface are configured to engage to thereby rotate the airfoils relative to the spars as the airfoils move along the spars towards the second end of the spars;

wherein a force from wind applied to the airfoil lessens over an entire length of the spars as the airfoils pivot.

**Related Proceedings Appendix (35 USC §41.37(c))**

There are no related appeals or interferences pending during this application.



**Evidence Appendix (35 USC §41.37(c))**

There was no evidence submitted during this application under 37 CFR §1.130, 1.131 or 1.132 or any evidence entered by the Examiner and relied upon by Appellant in the appeal.